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EXAMINER

HEWITT, JAMES M

ART UNIT	PAPER NUMBER
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3679

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/633,471	Applicant(s) HUGHES, WILLIAM JAMES	
	Examiner James M. Hewitt	Art Unit 3679	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 6/28/05, 11/23/05 & 2/13/06.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-66 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-66 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities:

On page 13, line 8, the coupling collar 700 is erroneously said to be shown in FIG. 7.

In the paragraph beginning on page 18, line 9, and in the paragraph beginning on page 19, line 1, numeral '302' is described as both the casing interior and coating.

Appropriate correction is required.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). The following does not find proper antecedent basis in the specification: the subject matter recited in lines 9-13 of claim 1, a plurality of transmission means, first plurality of transmission means, second plurality of transmission means.

Claim Objections

Claims 1-17, 19-49 and 51-66 are objected to because of the following informalities:

In claim 1, line 4, "first" should be deleted.

In claim 1, lines 9-13, the phrase "wherein the plug assembly may be joined to the socket assembly by the securing device in a plurality of orientations..." should be

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amended to make clear that the plurality of orientations are not governed by the securing device.

In claim 2, line 4, should the phrase “, and where N is equal to the number of outer splines” be deleted?

In claim 7, line 1, “the two tubing sections” should be replaced with “the first and second tubings.

In claim 9, line 1, “the two tubing sections” should be replaced with “the first and second tubings.

In claim 12, line 1, “the two tubing sections” should be replaced with “the first and second tubings.

In claim 13, line 1, “the two tubing sections” should be replaced with “the first and second tubings.

In claim 14, line 1, “the two tubing sections” should be replaced with “the first and second tubings.

In claim 15, line 1, “the two tubing sections” should be replaced with “the first and second tubings.

In claim 16, line 1, “the two tubing sections” should be replaced with “the first and second tubings.

In claim 17, line 1, “the two tubing sections” should be replaced with “the first and second tubings.

In claim 19, it is unclear as to how N can be said to be equal to the number of outer splines, when claim 18, from which claim 19 depends, requires N to be equal to the number of splines.

In claim 27, it is unclear as to how the at least one conduit containing a wire adapted to carry an electrical current relates to the transmission means recited in claim 19. For examination purposes, the transmission means has been considered to comprise the at least one conduit.

In claim 28, it is unclear as to how the at least one conduit containing material adapted to carry an optical relates to the transmission means recited in claim 19. For examination purposes, the transmission means has been considered to comprise the at least one conduit.

Claim 29 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 29 requires the tubing sections to comprise tubing. As tubing sections impliedly comprise tubing, claim 29 fails to further limit claim 19.

Claim 35 is objected to under 37 CFR 1.75(i), which states "Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation." Each of the using steps and the positioning step should be separate.

In claim 35, lines 5-7, it is unclear as to how the positioning step and aligning steps are distinct. Also, note claim 37. For examination purposes, they have been considered to be one and the same.

In claim 37, it is unclear as to how the positioning step relates to the aligning step in claim 35, and as to how the aligning step relates to the aligning step in claim 35. For examination purposes, they have been considered to be one and the same.

In claim 37, line 3, "the plug assembly outer splines" lacks proper antecedent basis.

In claim 37, line 4, "the receptacle" lacks proper antecedent basis.

In claim 39, it is unclear as to how the electrical connectors relate to the connectors recited in claim 35. For examination purposes, they have been considered to be one and the same.

In claim 39, the phrase "when the plug assembly of the first tubing section is inserted into the socket assembly of the second tubing section" lacks proper antecedent basis. No insertion step is recited in claim 35.

In claim 40, line 1, "the coupling collar" lacks proper antecedent basis.

In claim 40, the phrase "when the plug assembly of the first tubing section is inserted into the socket assembly of the second tubing section" lacks proper antecedent basis. No insertion step is recited in claim 35.

Claim 42 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper

dependent form, or rewrite the claim(s) in independent form. Claim 42 requires the tubing sections to comprise tubing. As tubing sections impliedly comprise tubing, claim 42 fails to further limit claim 35.

Claims 47-49 are objected to under 37 CFR 1.75(i), which states "Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation."

In claim 47, line 6, "end" should be inserted after "top" and "bottom".

In claim 47, line 14, "drill pipe" should be inserted before "sections".

In claim 47, line 18, "lower" should be inserted before "drill".

In claim 48, it is unclear as to how the keys and keyways relate to the splines and receptacles recited in claim 47. For examination purposes, they have been considered to be one and the same.

In claim 49, it is unclear as to how the legs and recesses relate to the splines and receptacles recited in claim 47. For examination purposes, they have been considered to be one and the same.

In claim 51, it is unclear as to how the means for connecting the first and second casing sections relate to the splines and receptacles recited in claim 50. For examination purposes, they have been considered to be one and the same.

In claim 52, it is unclear as to how the plurality of splines and receptacles relate to those recited in claim 50.

In claim 57, "the two tubing sections" lacks proper antecedent basis.

In claim 58, "the two tubing sections" lacks proper antecedent basis.

In claim 59, "the two tubing sections" lacks proper antecedent basis.

In claim 60, it is unclear as to how the at least one conduit containing a wire adapted to carry an electrical current relates to the transmission means recited in claim 50. For examination purposes, the transmission means has been considered to comprise the at least one conduit.

In claim 61, it is unclear as to how the at least one conduit containing material adapted to carry an optical relates to the transmission means recited in claim 50. For examination purposes, the transmission means has been considered to comprise the at least one conduit.

In claim 62, "the two tubing sections" lacks proper antecedent basis.

In claim 63, "the two tubing sections" lacks proper antecedent basis.

In claim 64, "the two tubing sections" lacks proper antecedent basis.

In claim 65, "the two tubing sections" lacks proper antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 47-49 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to

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one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 47, lines 5-6, the phrase "the improvement which comprises manufacturing the drill string so that the same is in alignment from the top to the bottom thereof" is not supported by the original disclosure.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-66 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-11, 17-28 and 34-41 and 47-61 of copending Application No. 10/671,141. Although the conflicting claims are not identical, they are not patentably distinct from each other because the

only substantive difference between the conflicting claims is that the claims of the instant application are drawn to tubing and the claims of the '141 application are drawn to rods. Using tubing in place of rods is considered obvious and fails to render the conflicting claims patentably distinct.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 7-20, 24-46, 50-53 and 57-66 rejected under 35 U.S.C. 102(b) as being anticipated by Moon (US 2,750,569).

With respect to claim 1, Moon discloses an apparatus comprising: a first tubing (1) and a second tubing (2); a plug assembly fixedly engaged to a first tubing proximate end and having a plurality of first splines (10) and a plurality of first connectors (26); a socket assembly fixedly engaged to a second tubing distal end and having a plurality of receptacles (defined by splines 4) and a plurality of second connectors (21); a securing device (11) for securing the plug assembly to the socket assembly; wherein the plug assembly may be joined to the socket assembly by the securing device in a plurality of orientations (vertically, horizontally, inclined, declined, relative to a given vantage point)

so that, in each of the plurality of orientations, when the plurality of splines in the plug assembly mate with the plurality of receptacles in the socket assembly, the plurality of first connectors engage the plurality of second connectors (see col. 3, lines 32-55).

With respect to claim 2, wherein the plurality of splines further comprises a center spline (24) and a plurality of outer splines of equal dimensions, the outer splines sharing a common longitudinal axis with the center spline and having symmetry about the common longitudinal axis, and where N is equal to the number of outer splines.

With respect to claim 3, wherein the securing device is a coupling collar adapted for connecting it to the plug assembly and the socket assembly, the coupling collar initially engaged with the plug assembly. Refer to Fig. 2.

With respect to claim 7, wherein the two tubing sections are connectable in two distinct orientations.

With respect to claim 8, wherein the two tubing sections are connectable in three distinct orientations.

With respect to claim 9, wherein the two tubing sections are connectable in four or more distinct orientations.

With respect to claim 10, further comprising at least one conduit (15) containing a wire adapted to carry an electrical current.

With respect to claim 11, further comprising at least one conduit (15) containing material adapted to carry an optical signal.

With respect to claim 12, wherein the tubing sections are tubing.

With respect to claim 13, wherein the tubing sections are pipe.

With respect to claim 14, wherein the tubing sections are casing.

With respect to claims 15-16, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations.

With respect to claim 17, wherein the tubing sections are connectable in a plurality of orientations.

With respect to claim 18, Moon discloses an apparatus for providing power to a subterranean environment, comprising: a drilling assembly containing a plurality of tubing sections; a plurality of tubing joints for connecting the plurality of tubing sections together, each tubing joint comprising: a plug assembly having a plurality of splines (10); a socket assembly having a plurality of receptacles (defined by splines 4), the plurality of receptacles adapted to receive the plurality of splines of the plug assembly; a plurality of transmission means (14, 15, 26, 19, 21) running the length of the apparatus; a securing device (11) for securing the plug assembly of one tubing section to the socket assembly of another tubing section; wherein the plug assembly of one tubing section and the socket assembly of another tubing section may be joined in N orientations (e.g. vertically, horizontally, angled, relative to a given vantage point) where N is equal to the number of splines; and wherein the plurality of transmission means are aligned for connectivity when the plurality of splines on one tubing joint are inserted into the plurality of receptacles on another tubing joint (see col. 3, lines 32-55).

With respect to claim 19, wherein the plurality of splines further comprises a center spline (24) and a plurality of outer splines of equal dimensions, the outer splines sharing a common longitudinal axis with the center spline and having symmetry about the common longitudinal axis, and where N is equal to the number of outer splines.

With respect to claim 20, wherein the securing device is a coupling collar adapted for connection to the plug assembly and the socket assembly, the coupling collar initially engaged with the plug assembly.

With respect to claim 24, wherein the two tubing sections are connectable in two distinct orientations.

With respect to claim 25, wherein the two tubing sections are connectable in three distinct orientations.

With respect to claim 26, wherein the two tubing sections are connectable in four or more distinct orientations.

With respect to claim 27, further comprising at least one conduit (15) containing a wire adapted to carry an electrical current.

With respect to claim 28, further comprising at least one conduit (15) containing material adapted to carry an optical signal.

With respect to claim 29, wherein the tubing sections are tubing.

With respect to claim 30, wherein the tubing sections are pipe.

With respect to claim 31, wherein the tubing sections are casing.

With respect to claims 32-33, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate

the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations.

With respect to claim 34, wherein the tubing sections are connectable in a plurality of orientations.

With respect to claim 35, Moon discloses a method of using a tubing joint to joint two tubing sections together, comprising: using a first tubing section (1) having a plurality of first connectors (26) and a proximate end having a plug assembly attached and using a second tubing section (2) having a plurality of second connectors (21) and a distal end having a socket assembly attached, positioning the first tubing section coaxially with the second tubing section; aligning the first tubing section with the second tubing section; engaging the plug assembly of the first tubing section into the socket assembly of the second tubing section so that the plurality of first connectors engage the plurality of second connectors; and securing the first tubing section to the second tubing section (see col. 3, lines 32-55).

With respect to claim 36, wherein the positioning step further comprises: positioning the first tubing section coaxially with the second tubing section such that the proximate end of the first tubing section is in close proximity with the distal end of the second tubing section (see col. 3, lines 32-55).

With respect to claim 37, wherein the positioning step further comprises: aligning the first tubing section with the second tubing section by rotating one or both tubing sections such that the plug assembly outer splines of the first tubing section are

positioned to properly mate with the receptacle in the socket assembly of the second tubing section (see col. 3, lines 32-55).

With respect to claim 38, wherein the first tubing section is vertically above the second tubing section.

With respect to claim 39, wherein a pair of electrical connectors (26/21) are electrically coupled when the plug assembly of the first tubing section is inserted into the socket assembly of the second tubing section.

With respect to claim 40, wherein a pair of optical connectors (26/21) are optically coupled when the plug assembly of the first tubing section is inserted into the socket assembly of the second tubing section.

With respect to claim 41, wherein the coupling collar (11) of the first tubing section is used to secure the first tubing section to the second tubing section.

With respect to claim 42, wherein the tubing sections are tubing.

With respect to claim 43, wherein the tubing sections are pipe.

With respect to claim 44, wherein the tubing sections are casing.

With respect to claims 45-46, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations.

With respect to claim 50, Moon discloses an apparatus for connecting a plurality of casing sections together comprising: a first casing section (1); a second casing section (2) removably connected to the first casing section; and wherein the first casing

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section and the second casing section are connectable in a plurality of distinct orientations (e.g. vertically, horizontally, angled, relative to a given vantage point); wherein a first plurality of transmission means (26) are adapted for location within the first casing section and a second plurality of transmission means (21) are adapted for location within the second casing section; and wherein in each of the plurality of distinct orientations, the first plurality of transmission means are aligned for connectivity with the second plurality of transmission means by means of a mating of a plurality of splines and a corresponding plurality of receptacles (see col. 3, lines 32-55).

With respect to claim 51, wherein the connection between the first casing section and the second casing section comprises: a means for connecting (splines) the first casing section to the second casing section in a plurality of distinct orientations.

With respect to claim 52, wherein the connection between the first casing section and the second casing section comprises: a plug assembly having a plurality of splines (10) affixed to the first casing section; a socket assembly having a plurality of receptacles (defined by splines 4) adapted to receive the plurality of splines of the plug assembly, the socket assembly being affixed to the second casing section; and a securing device (11) for securing the plug assembly to the socket assembly.

With respect to claim 53, wherein the securing device is a coupling collar adapted for connection to the plug assembly and the socket assembly, the coupling collar initially engaged with the plug assembly.

With respect to claim 57, wherein the two tubing sections are connectable in two distinct orientations.

With respect to claim 58, wherein the two tubing sections are connectable in three distinct orientations.

With respect to claim 59, wherein the two tubing sections are connectable in four or more distinct orientations.

With respect to claim 60, further comprising at least one conduit (15) containing a wire adapted to carry an electrical current.

With respect to claim 61, further comprising at least one conduit (15) containing material adapted to carry an optical signal.

With respect to claim 62, wherein the tubing sections are tubing.

With respect to claim 63, wherein the tubing sections are pipe.

With respect to claim 64, wherein the tubing sections are casing.

With respect to claims 65-66, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations.

Claims 1-5, 7-22, 24-55 and 57-66 rejected under 35 U.S.C. 102(b) as being anticipated by Curlett (US 4,836,305).

With respect to claim 1, from Figs. 2, 6 and 11, Curlett discloses an apparatus comprising: a first tubing and a second tubing; a plug assembly (105) fixedly engaged to a first tubing proximate end and having a plurality of first splines (100,104) and a plurality of first connectors (120); a socket assembly (103) fixedly engaged to a second

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tubing distal end and having a plurality of receptacles (102,106) and a plurality of second connectors (128); a securing device (84) for securing the plug assembly to the socket assembly; wherein the plug assembly may be joined to the socket assembly by the securing device in a plurality of orientations (vertically, horizontally, inclined, declined, relative to a given vantage point) so that, in each of the plurality of orientations, when the plurality of splines in the plug assembly mate with the plurality of receptacles in the socket assembly, the plurality of first connectors engage the plurality of second connectors.

With respect to claim 2, wherein the plurality of splines further comprises a center spline (104) and a plurality of outer splines (100) of equal dimensions, the outer splines sharing a common longitudinal axis with the center spline and having symmetry about the common longitudinal axis, and where N is equal to the number of outer splines.

With respect to claim 3, wherein the securing device is a coupling collar adapted for connecting it to the plug assembly and the socket assembly, the coupling collar initially engaged with the plug assembly.

With respect to claim 4, wherein the plug assembly further comprises fine threads. The threads can be considered fine, (refer to columns 8 and 9).

With respect to claim 5, wherein the socket assembly further comprises coarse threads. The threads can be considered coarse, (refer to columns 8 and 9).

With respect to claim 7, wherein the two tubing sections are connectable in two distinct orientations.

With respect to claim 8, wherein the two tubing sections are connectable in three distinct orientations.

With respect to claim 9, wherein the two tubing sections are connectable in four or more distinct orientations.

With respect to claim 10, further comprising at least one conduit containing a wire adapted to carry an electrical current.

With respect to claim 11, further comprising at least one conduit containing material adapted to carry an optical signal.

With respect to claim 12, wherein the tubing sections are tubing.

With respect to claim 13, wherein the tubing sections are pipe.

With respect to claim 14, wherein the tubing sections are casing.

With respect to claims 15-16, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations.

With respect to claim 17, wherein the tubing sections are connectable in a plurality of orientations.

With respect to claim 18, Curlett discloses an apparatus for providing power to a subterranean environment, comprising: a drilling assembly containing a plurality of tubing sections; a plurality of tubing joints for connecting the plurality of tubing sections together, each tubing joint comprising: a plug assembly (105) having a plurality of splines (100,104); a socket assembly (103) having a plurality of receptacles (102,106),

the plurality of receptacles adapted to receive the plurality of splines of the plug assembly; a plurality of transmission means (see Fig. 7) running the length of the apparatus; a securing device (84) for securing the plug assembly of one tubing section to the socket assembly of another tubing section; wherein the plug assembly of one tubing section and the socket assembly of another tubing section may be joined in N orientations (vertically, horizontally, inclined, declined, relative to a given vantage point) where N is equal to the number of splines; and wherein the plurality of transmission means are aligned for connectivity when the plurality of splines on one tubing joint are inserted into the plurality of receptacles on another tubing joint (e.g. refer to Fig. 11).

With respect to claim 19, wherein the plurality of splines further comprises a center spline (104) and a plurality of outer splines (100) of equal dimensions, the outer splines sharing a common longitudinal axis with the center spline and having symmetry about the common longitudinal axis, and where N is equal to the number of outer splines.

With respect to claim 20, wherein the securing device is a coupling collar adapted for connection to the plug assembly and the socket assembly, the coupling collar initially engaged with the plug assembly.

With respect to claim 21, wherein the plug assembly further comprises fine threads. The threads can be considered fine, (refer to columns 8 and 9).

With respect to claim 22, wherein the socket assembly further comprises coarse threads. The threads can be considered coarse, (refer to columns 8 and 9).

With respect to claim 24, wherein the two tubing sections are connectable in two distinct orientations.

With respect to claim 25, wherein the two tubing sections are connectable in three distinct orientations.

With respect to claim 26, wherein the two tubing sections are connectable in four or more distinct orientations.

With respect to claim 27, further comprising at least one conduit containing a wire adapted to carry an electrical current.

With respect to claim 28, further comprising at least one conduit containing material adapted to carry an optical signal.

With respect to claim 29, wherein the tubing sections are tubing.

With respect to claim 30, wherein the tubing sections are pipe.

With respect to claim 31, wherein the tubing sections are casing.

With respect to claims 32-33, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations.

With respect to claim 34, wherein the tubing sections are connectable in a plurality of orientations.

With respect to claim 35, Curlett discloses a method of using a tubing joint to joint two tubing sections together, comprising: using a first tubing section (105) having a plurality of first connectors (120) and a proximate end having a plug assembly attached

and using a second tubing section (103) having a plurality of second connectors (128) and a distal end having a socket assembly attached, positioning the first tubing section coaxially with the second tubing section; aligning the first tubing section with the second tubing section; engaging the plug assembly of the first tubing section into the socket assembly of the second tubing section so that the plurality of first connectors engage the plurality of second connectors; and securing the first tubing section to the second tubing section.

With respect to claim 36, wherein the positioning step further comprises: positioning the first tubing section coaxially with the second tubing section such that the proximate end of the first tubing section is in close proximity with the distal end of the second tubing section.

With respect to claim 37, wherein the positioning step further comprises: aligning the first tubing section with the second tubing section by rotating one or both tubing sections such that the plug assembly outer splines (104) of the first tubing section are positioned to properly mate with the receptacle in the socket assembly of the second tubing section.

With respect to claim 38, wherein the first tubing section is vertically above the second tubing section.

With respect to claim 39, wherein a pair of electrical connectors (120/128) are electrically coupled when the plug assembly of the first tubing section is inserted into the socket assembly of the second tubing section.

With respect to claim 40, wherein a pair of optical connectors (120/128) are optically coupled when the plug assembly of the first tubing section is inserted into the socket assembly of the second tubing section.

With respect to claim 41, wherein the coupling collar (84) of the first tubing section is used to secure the first tubing section to the second tubing section.

With respect to claim 42, wherein the tubing sections are tubing.

With respect to claim 43, wherein the tubing sections are pipe.

With respect to claim 44, wherein the tubing sections are casing.

With respect to claims 45-46, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations.

With respect to claim 47, Curlett discloses in a drill string of the type comprising a plurality of drill pipe sections arranged in end to end relation from a location above the ground to a lower location adjacent to an orientable tool connected to a bottom end of the drill string and wherein adjacent ends of the drill pipe sections are connected to each other to form a plurality of spaced pipe joints extending downwardly from the ground to the tool, the improvement which comprises manufacturing the drill string so that the same is in alignment from the top to the bottom thereof and wherein each pipe section is provided with a lower end having a plurality of splines (104,100) and an upper end having a plurality of receptacles (102,106) which is in alignment with and corresponds with the plurality of splines on the lower end of the same pipe section, and

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wherein each pipe joint comprises an upper drill pipe section having its splines received in corresponding receptacles in the next adjacent lower drill pipe section and wherein the splines and the receptacles can fit together in more than one orientation, wherein the adjacent end of the sections are threaded and wherein an internally threaded collar is received over the threaded ends to hold the sections of each pipe joint securely together, and wherein a plurality of connectors (120,128) are aligned for connectivity when the splines of the upper drill pipe section are received in the corresponding receptacles in the next adjacent drill pipe section.

With respect to claim 48, wherein the upper drill pipe section and the lower drill pipe section are provided with keyways (102,106) which are symmetrically related with respect to the longitudinal axis of the drill string and wherein keys (100,104) are affixed to the keyways of the upper drill section and are adapted to fit into the keyways of the lower drill pipe section.

With respect to claim 49, wherein the upper drill pipe section is provided with at least three downwardly extending legs (100,104) which are symmetrically arranged with respect to the longitudinal axis of the drill string and wherein the lower drill pipe section is provided with a corresponding number of recesses (102,106) arranged so as to receive the legs of the upper drill pipe section.

With respect to claim 50, Curlett discloses an apparatus for connecting a plurality of casing sections together comprising: a first casing section (105); a second casing section (103) removably connected to the first casing section; and wherein the first casing section and the second casing section are connectable in a plurality of distinct

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orientations (vertically, horizontally, inclined, declined, relative to a given vantage point); wherein a first plurality of transmission means (120) are adapted for location within the first casing section and a second plurality of transmission means (128) are adapted for location within the second casing section; and wherein in each of the plurality of distinct orientations, the first plurality of transmission means are aligned for connectivity with the second plurality of transmission means by means of a mating of a plurality of splines and a corresponding plurality of receptacles.

With respect to claim 51, wherein the connection between the first casing section and the second casing section comprises: a means for connecting (splines/receptacles) the first casing section to the second casing section in a plurality of distinct orientations.

With respect to claim 52, wherein the connection between the first casing section and the second casing section comprises: a plug assembly having a plurality of splines (100,104) affixed to the first casing section; a socket assembly having a plurality of receptacles (102,106) adapted to receive the plurality of splines of the plug assembly, the socket assembly being affixed to the second casing section; and a securing device (84) for securing the plug assembly to the socket assembly.

With respect to claim 53, wherein the securing device is a coupling collar adapted for connection to the plug assembly and the socket assembly, the coupling collar initially engaged with the plug assembly.

With respect to claim 54, wherein the plug assembly further comprises fine threads. The threads can be considered fine, (refer to columns 8 and 9).

With respect to claim 55, wherein the socket assembly further comprises coarse threads. The threads can be considered coarse, (refer to columns 8 and 9).

With respect to claim 57, wherein the two tubing sections are connectable in two distinct orientations.

With respect to claim 58, wherein the two tubing sections are connectable in three distinct orientations.

With respect to claim 59, wherein the two tubing sections are connectable in four or more distinct orientations.

With respect to claim 60, further comprising at least one conduit containing a wire adapted to carry an electrical current.

With respect to claim 61, further comprising at least one conduit containing material adapted to carry an optical signal.

With respect to claim 62, wherein the tubing sections are tubing.

With respect to claim 63, wherein the tubing sections are pipe.

With respect to claim 64, wherein the tubing sections are casing.

With respect to claims 65-66, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations.

Claims 1, 3-9, 12-18, 20-26, 29-38, 41-59 and 62-66 are rejected under 35 U.S.C. 102(b) as being anticipated by Wilson (US 1,781,091).

The Wilson apparatus illustrates two drill pipe tubing sections for wells joined together including a plug assembly 1 having a plurality of splines 6 and a socket assembly having a plurality of receptacles adapted to receive the plurality of splines. A couple of the splines have been interpreted as the first plurality of connectors, and a couple of the receptacles have been interpreted as the second plurality of connectors. Similarly, a couple of the splines have been interpreted as the first plurality of transmission means insofar as they transmit force, and a couple of the receptacles have been interpreted as the second plurality of transmission means insofar as they transmit force. A threaded securing device 3 for securing a plug assembly to the socket assembly wherein the plug assembly and the socket assembly can be joined multiple orientations (vertically, horizontally, inclined, declined, relative to a given vantage point) in relation to the number of splines. As to claims 3, 20, 46 and 53, the coupling collar can be initially engaged with the plug assembly 1. As to claims 4, 21 and 54, the threads can be considered fine. As to claims 5, 22 and 55, the threads can be considered coarse. As to claims 6, 23 and 56, the threads as shown in Fig. 1 are tapered. As to claims 7-9, 17, 24-26, 34, 51 and 57-59, the two tubing sections are connectable in two, three, and four or more distinct orientations. As to claims 12-14, 29-31, 42-44 and 62-64, the tubing sections are tubing, pipe or casing. Claim 15-16, 32-33, 45-46 and 65-66 are considered intended use claims and do not patentably define over the prior art since the tubing sections can be used in many different instances.

Response to Arguments

Applicant's arguments filed 6/28/05, 11/23/05 and 2/13/06 have been fully considered but they are not persuasive.

Refer to the above rejections for the Examiner's position regarding the double patenting and art rejections.

To specifically address Applicant's assertion "The '305 patent does not disclose a way to align the connectors of one tubing section for automatic engagement with the connectors of another tubing section using only splines, receptacles and connectors." noted on page 3 of Applicant's remarks filed 6/28/05 and 2/13/06 and on page 2 of Applicant's remarks filed 11/23/05, it should be noted that the claims do not require that the connectors of one tubing section are aligned for automatic engagement with the connectors of another tubing section using only splines, receptacles and connectors.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

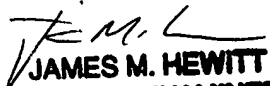
Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Hewitt whose telephone number is 571-272-7084.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Stodola can be reached on 571-272-7087. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


JAMES M. HEWITT
PRIMARY EXAMINER